VOLUME CONTENTS

VOLUME 30, NUMBER 1 1990 PAGES 1–204

	1	Calendar of International Conferences, Symposia, Lectures and Meetings of Interest
	5	Publications, Notices, Calls for Papers, Etc.
	17	Announcement
R. Venkatapathi Naidu	19	NMOS process simulator using Monte Carlo methods
S. H. Ahmad	23	Enumeration of minimal cutsets of an undirected graph
S. Dimitrov	27	A conception for reliability prediction and estimation of MOS integrated circuits
F. Wurnik	35	Sampling analysis in the dpm range
D. M. Brkić	39	Interval estimation of the parameters β and η of the two-parameter Weibull distribution
U. Sharma, K. B. Misra and A. K. Bhattacharya	43	Optimization of CCNs: exact and heuristic approaches
D. Simeonov, T. Balabanska and E. Goranova	51	Probability approach for investigation of MOST threshold voltage dependence on gate electrode length
K. Murari and A. A. Al-Ali	55	Two-unit standby reliability system subject to effective and non-effective random shocks
L. R. Goel, R. K. Agnihotri and R. Gupta	61	Stochastic analysis of a two unit warm standby system with fault detection and inspection
B. Colin, J. Goulet and C. Martel	67	A note on microprocessor typology
B. Wisz	89	Thermally conditioned placement optimization of elements in hybrid microcircuits
J. Quincke	105	Analysis of latch-up neighborhood effects in VLSI CMOS input and output stages
A. Scorzoni, G. C. Cardinali, G. L. Baldini and G. Soncini	123	A resistometric method to characterize electromigration at the wafer level
A. Kyriakoussis and A. S. Papadopoulos	133	The logarithmic series distribution as a failure model from the Bayesian point of view
M. Smotherman	141	Error analysis in analytic reliability modeling
K. Teramoto, T. Nakagawa and M. Motoori	151	Optimal inspection policy for a parallel redundant system
K. F. Kafrawy and A. M. Rushdi	157	Uncertainty analysis of fault trees with statistically correlated failure data
	177	Book Reviews *Numerical Methods with FORTRAN 77. A Practical Introduction* *Probability and Random Processes for Electrical Engineering* *Software Development with Modula-2* *VLSI Electronics Microstructure Science 15. VLSI Metallization* *Polymers in Microelectronics. Fundamentals and Applications* *Computer Architecture and Design* *Gallium Arsenide Digital Integrated Circuits. A Systems Perspective* *Computer-aided Circuit Analysis Using SPICE* *Surface Mount and Related Technologies* *VLSI RISC Architecture and Organization* *Fiber Optic Component Design, Fabrication, Testing, Operation, Reliability and Maintainability*

	189	World Abstracts on Microelectronics and Reliability
	i	New Patents

VOLUME 30, NUMBER 2 1990 PAGES 205–420

	205	Publications, Notices, Calls for Papers, Etc.
	211	Bulletin—Society of Reliability Engineers
Venkatapathi Naidu Rayapati	213	Modular fault tolerant VLSI parallel processor architectures with dynamic redundancy
Who Kee Chung	237	A reliability analysis of a k-out-of-N:G redundant system with common-cause failures and critical human errors
Who Kee Chung	243	Common-cause failures and critical human errors in repairable and non-repairable systems
L. B. Page and J. E. Perry	249	Combining vertex decompositions with factoring in an all-terminal network reliability algorithm
F. Wurnik and W. Pelloth	265	Functional burn-in for integrated circuits
C. M. Krishna	275	Fault-tolerant synchronization using phase-locked clocks
R. P. Singh and R. B. Misra	289	Two unit repairable redundant standby system
A. M. Rushdi	299	Threshold systems and their reliability
G. S. Mokaddis, S. S. Elias and E. A. Soliman	313	A three-unit standby redundant system with repair and preventive maintenance
G. S. Mokaddis and Kh. M. El-Said	327	Two models for two unit warm standby redundant system with two different kinds of repair and tolerable time
B. S. Dhillon and H. C. Viswanath	375	Bibliography of literature on testability
	417	Book Reviews *Soldering in Electronics* *System Reliability*
	i	New Patents

VOLUME 30, NUMBER 3 1990 PAGES 421–628

	421	Publications, Notices, Calls for Papers, etc.
P. K. Kapur, R. B. Garg and V. K. Bhalla	425	Compound availability measures for a two-unit standby system
G. S. Mokaddis and Kh. M. El-Said	431	Two models for two-dissimilar-unit cold standby redundant system with partial failure and two types of repairs
M. Gururajan and K. Shankar Bhat	453	A complex priority redundant system with phase type distribution
D. Kumar, Jai Singh and P. C. Pandey	457	Cost analysis of a multi-component screening system in the paper industry
J. P. Singh Joorel	463	MTSF and availability analysis of a complex system composed of two subsystems in series subjected to random shocks with single repair facility
C. P. L. Srivastava and S. R. Srivastava	467	Testing equality of means in a bivariate normal population under possible presence of correlation coefficient
S. K. Singh and R. P. Singh	473	Analysis of a protective system having two types of failure

Huang Xizi	481	The limit condition of some time between failure models of software reliability
E. J. Vanderperre	487	Reliability analysis of a warm standby system with general distributions
E. J. Vanderperre	491	Reliability analysis of a two-unit parallel system with dissimilar units and general distributions
J. Biernat	503	The alternate approach to the reliability modeling of fault masking systems
G. K. Agrafiotis, P. R. Parthasarathy and M. Sharafali	507	Excess repair time for a repairable system
T. I. Sultan	511	Performance control of systems with two decisive factors
T. I. Sultan	515	Estimated costs of system maintenance and repair
E. Yaprak and L. Anneberg	519	Parallelization of expert systems with recursive applications
A. M. Rushdi	525	Star-delta transformations of bidirectional branches in probabilistic flow networks
Y. V. S. Sarma and R. P. Jaju	537	Probabilistic analysis of a two-unit system with 'start-up process time' and imperfect switch
Y. S. Sherif and R. G. Dear	545	Development of a new composite pseudo random number generator
Y. S. Sherif and A. A. Heaney	555	Development of a generic database for CAE/CAD/CAM system at an Air Force facility
Shey-Huei Sheu	565	Periodic replacement when minimal repair costs depend on the age and the number of minimal repair for a multi-unit system
T. N. Issa and D. Hommertzheim	573	Availability measures of human-equipment standby redundant data-flow system with application to NASA deep space station
Who Kee Chung	585	Reliability analysis of a k-out-of-N:G parallel redundant system with multiple critical errors
M. J. LuValle	591	A note on experiment design for accelerated life tests
	605	Book Reviews *Reliability Fundamentals* *Lithography in Microelectronics* *VLSI Electronics Microstructure Science. Vol. 21. Beam Processing Technologies* *Particles on Surfaces. Vol. 1. Detection, Adhesion, and Removal* *Applied Electromagnetics in Materials* *Natural Language Processing Technologies in Artifical Intelligence: The Science and Industry Perspective*
	613	World Abstracts on Microelectronics and Reliability
	i	New Patents

VOLUME 30, NUMBER 4 1990 PAGES 629–834

R. P. Anjard	629	Analytical techniques for the evaluation of co-precipitated materials
R. Kalyan and S. Kumar	635	A study of Protean systems—redundancy optimization in consecutive-k-out-of-n:F systems
G. S. Hura and E. Docken	639	PROLOG in distributed systems: an overview
R. Gupta, S. Bansal and L. R. Goel	649	Profit analysis of two-unit priority standby system with rest period of the operator

L. R. Goel, R. Gupta and P. Shrivastava	655	Profit analysis of a two-unit cold standby system with varying physical conditions of the repairman
G. D. Goel and K. Murari	661	Two-unit cold-standby redundant system subject to random checking, corrective maintenance and system replacement with repairable and non-repairable types of failure
I. P. Singh, C. Ram and D. Kumar	667	The service channel subject to breakdown and idleness with bulk service
S. P. Jain and K. Gopal	673	A heuristic method of link reliability assignment for maximal reliability
P. N. Andhare, R. K. Nahar, N. M. Devashrayee, S. Chandra and W. S. Khokle	681	Development and performance characterization of the lightly doped drain MOS transistor
E. V. Prasad and A. K. Sarje	691	Enumeration of multiprocessing events and reliability computation of a multiprocessor system
R. Subramanian and R. Natarajan	697	A two-unit redundant system with different types of failure and "imperfect" repair
U. Sharma, S. C. Panigrahi and R. B. Misra	701	Reliability evaluation of a communication system considering a multistate model
V. M. Cătuneanu, Fl. Popentiu, G. Albeanu, D. Vlasceanu and A. Vătaşescu	705	Optimal topological design of large telephone networks
Shey-Huei Sheu	713	Periodic replacement when minimal repair costs depend on the age and the number of minimal repairs for a multi-unit system
S. Kal, S. Haldar and S. K. Lahiri	719	Slope etching of silicon dioxide
B. S. Dhillon and H. C. Viswanath	723	Bibliography of literature on failure data
A. M. Abouammoh, A. Kanjo and A. Khalique	751	On some aspects of variance remaining life distributions
M. Lehtelä	761	Computer-aided failure mode and effect analysis of electronic circuits
L. R. Jaisingh	775	Characterization of inverse Gaussian and inverted gamma distributions
N. Limnios and O. Theologou	781	Closed-form solution for lifetime distribution of single-component failure delay systems
N. Kaio and S. Osaki	785	Optimum ordering policies with non-linear running and salvage costs
M. A. Manzoul and M. Suliman	795	Neural network for the reliability analysis of simplex systems
M. A. Manzoul and M. Suliman	801	Reliability analysis of TMR systems on neural network
H. Ascher	807	Letter to the Editor—Comment on "The nonhomogeneous Poisson process—a model for the reliability of complex repairable systems"
H. Reiche	809	Society of Reliability Engineers Bulletin
	811	Book Review *Electronics Reliability and Measurement Technology*
	813	Calendar of International Conferences, Symposia, Lectures and Meetings of Interest
	817	Publications, Notices, Calls for Papers, etc.
	823	World Abstracts on Microelectronics and Reliability
	i	New Patents

VOLUME 30, NUMBER 5 1990 PAGES 835–1018

G. Matthaei	835	A model for mechanisms in plastic encapsulated microelectronic devices during temperature–humidity tests—I
A. Chen, X. Gui and G.-B. Gao	839	Modelling of thermal fatigue failure in soft-soldered semiconductor devices using the internal variable method
L. R. Goel, R. Gupta and S. E. Moafi B.	845	Stochastic analysis of a multi-unit cold standby system working in orbit form
O. Martynenko	851	The definition of two-phase repair member capacity of complex radioelectronic systems
Huang Xizi	855	The limit conditions of five failure counting models of software reliability
P. P. Gupta, A. Singhal and G. S. Srivastava	861	Reliability and MTTF analysis of a three-state multi-component parallel redundant system under overloading effect and waiting
P. P. Gupta, S. Sharma and R. K. Sharma	865	A two-unit standby power plant with imperfect switching
G. C. Sharma	869	Stochastic behaviour of a cold standby system with partial failure and slow switching device
B. V. S. Sisodia and S. Kumar	873	Comparison of some ratio-type estimators
Venkatapathi Naidu Rayapati	877	VLSI semiconductor random access memory functional testing
Yan Chunning and Shi Dinghua	891	Classification of fault trees and algorithms of fault tree analysis
V. M. Cătuneanu, C. Moldovan, F. Popentiu and G. Albeaňu	897	Maintenance philosophy using queueing multilevel stochastic service system
C. Canali, E. Corti, F. Magistrali, M. Sangalli, A. Paccagnella, C. Tedesco and M. Vanzi	903	Thermally induced parasitic ungated FET in power MESFETs
Who Kee Chung	907	Reliability analysis of a k-out-of-N:G redundant system with multiple critical errors
G. Gspan and R. Osredkar	911	Determination of local stress in PECVD nitride films
Y. S. Sherif	915	Environmental and technological risks and hazards
M. J. Patyra and J. Zabrodzki	951	The scaled-down circuit yield improvement by technological centering
B. S. Dhillon	963	Human error data banks
Min-Tsai Lai and J. Yuan	973	Optimal replacement policy (N*, n*) for a parallel system with common cause failure and geometric repair time
H. Reiche	983	Society of Reliability Engineers Bulletin
F. Popentiu	985	The Romanian Reliability Society
R. M. Jacobs	987	Conference Report—Reliability and Maintainability Symposium (RAMS 1990)
	993	Book Reviews *Multilayer Bonding Guide* *Applied Electromagnetics in Materials*
	995	Calendar of International Conferences, Symposia, Lectures and Meetings of Interest
	999	Publications, Notices, Calls for Papers, etc.
	1005	World Abstracts on Microelectronics and Reliability
	i	New Patents

VOLUME 30, NUMBER 6 1990 PAGES 1019–1210

1019 Note by the Editor-in-Chief

J. Singh, P. C. Pandey and D. Kumar 1021 Designing for reliable operation of urea synthesis in the fertilizer industry

D. Kumar, J. Singh and P. C. Pandey 1025 Design and cost analysis of a refining system in the sugar industry

D. Walker and G. S. Hura 1029 A tutorial on fault tolerance issues with applications in distributed systems

R. Gupta, S. Bansal and L. R. Goel 1039 Reliability analysis of a system with a mixture of warm and cold standby

S. K. Singh, R. P. Singh and R. B. Singh 1043 Switch failure in a two duplex unit standby system

K. Nakashima and G. G. Weber 1049 A method to test whether a system is near failure

R. N. Kulkarni, V. V. S. Sanyasi and A. K. Babar 1055 A new empirical distribution for the uncertainty analysis of the top event of a fault tree

S. K. Singh, S. K. Upadhyay and U. Singh 1061 On the selection of gamma vs exponential distribution and adaptive estimation of the parameters

G. D. Goel, R. K. Tuteja and K. Murari 1065 Single-unit system with corrective maintenance at random checks governed by probabilities in a geometric progression

R. K. Nahar, N. M. Devashrayee, W. S. Khokle and P. J. George 1071 On the electrical resistivity and chemical etching of $TiSi_2$ thin films sputtered from a composite target

R. K. Arora and S. K. Sharma 1075 A unified approach to the development of an exceedingly efficient algorithm for digital filter design

R. K. Arora and V. K. Gupta 1081 Computer communication networks—a study in the Indian context

N. Kareer, P. K. Kapur and P. S. Grover 1085 An S-shaped software reliability growth model with two types of errors

Jinhua Cao and Yuedong Wang 1091 Optimal allocation for a repairable system

Qiming He, Yuedong Wang and Daozhi Zhang 1095 On the first failure time of two-unit systems in two environments

P. Camarda 1099 Bounds evaluation of coefficients in the reliability polynomial

K. Y. Tong, K. W. Yip and W. M. Fung 1111 Electrical characterization of silicon surface after reactive ion etching of silicon dioxide by CHF_3

T. Nakagawa, K. Yasui and M. Motoori 1117 Optimal fault margin in a computer system

R. K. Sah 1123 An explicit closed-form formula for profit-maximizing k-out-of-n systems subject to two kinds of failures

V. Ramachandran and V. Sankaranarayanan 1131 Dynamic redundancy allocation using Monte-Carlo optimization

V. Ramachandran and V. Sankaranarayanan 1137 Prolog representation of reliability networks and evaluation of system reliability

K. K. Sharma and R. S. Rana 1145 Robustness of sequential gamma life testing procedures

S. S. Elias and S. W. Labib 1155 Cost analysis of a two-dissimilar unit cold standby redundant system with administrative delay and no priority in repair

B. S. Dhillon and H. C. Viswanath 1179 On common-cause failures—bibliography

H. Reiche 1197 Society of Reliability Engineers Bulletin

1199 World Abstracts on Microelectronics and Reliability

i New Patents

I Title Section, Volume Contents and Author Index, Volume 30, 1990